CLAIMS

1. A method of performing discrete wavelet transformation on an image signal, comprising:

- a first step of dividing the image into a plurality of first blocks each consisting of (W pixels by H pixels);

- a second step of performing wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH;

- a third step of storing sub-frequency band blocks LL so as to produce second blocks having the same size as the first blocks and each consisting of sub-frequency band blocks LL; and

- a fourth step of performing wavelet transformation on the second blocks.

2. A method according to claim 1, wherein the image is divided into a plurality of first groups each consisting of (n first blocks horizontally lined in the image by n first blocks vertically lined therein), and the second to fourth steps are performed on each first group.

3. A method according to claim 1, wherein: sub-frequency band blocks LL resulting from wavelet transformation of the second blocks are stored in units of the first group in order to produce third blocks having the same size as the first blocks; the third blocks are used as the first blocks and subjected to wavelet transformation; the image is divided into a plurality of second groups each consisting of (n first groups horizontally lined in the image by n first groups vertically lined therein); and production of the third blocks and wavelet transformation thereof are performed in units of the second group.

4. A method according to claim 3, wherein grouping to be performed according to a required resolution level meets the condition that each of groups to be produced at an i resolution level should consist of (n groups produced at an (i-1) resolution level to be horizontally lined in the image by n groups produced thereat to be vertically lined therein).

5. A method according to claim 4, wherein at the i resolution level, sub-frequency band blocks LL produced at the (i-1) resolution level are grouped in order to produce blocks having the same size as the first blocks, and the blocks are subjected to wavelet transformation.

6. A method according to claim 1, wherein the size of the first blocks meets $[2W+OP]^2$ where OP denotes the number of columns or rows shared by overlapping adjacent blocks.

7. A method according to claim 3, wherein n denotes 2.

8. A storage device storing computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7.

9. A storage product storing computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7.

10. A signal conveying computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7.

11. A scanner being available a method according to any of claims 1 to 6.

12. A copier machine being available a method according to any of claims 1 to 6.

13. A digital camera being available a method according to any claims 1 to 6.

14. A device for performing block-based discrete wavelet transformation on an image signal, comprising:

- a controller for dividing the image into a plurality of first blocks each consisting of (W pixels by H pixels);

- a filtering circuit for performing wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH; and

- a memory circuit in which sub-frequency band blocks LL are stored in order to produce second blocks having the same size as the first blocks and each consisting of sub-frequency band blocks LL,

wherein said filtering circuit performs wavelet transformation on the second blocks.

15. A coding method including a method according to any claims 1 to 7.

16. A coding apparatus including an apparatus according to ~~a~~ claim 13.